

REMARKS

Claims 1-3 were originally filed in the application. Claims 4-63 were added by amendment in the Reissue Application. Claims 64-95 were added in a previous amendment. Claims 20-23, 40-48, and 50-63 were withdrawn from consideration by the Examiner. Claims 4-19, 24-39, 49, 65, 80-91, and 94 were cancelled in a previous amendment. Claim 1-3, 64-79, 92-93, and 95 are pending.

In the Office Action, claims 2-3, 69-74, and 76 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant respectfully submits that appropriate correction has been made in this amendment. Specifically, claims 2 and 3 have been amended to correct “said communication means” to —means for providing maintenance advice to maintenance personnel— which has proper antecedent basis. Further, claim 3 has been corrected as suggest in the Office Action to change “maintenance advisory” to —maintenance advisories--.

Claim 69 has been amended to properly depend from claim 64, as opposed to the nonexistent claim 645. Claim 72 has been amended to make clear the data transmitted from the ground station is “maintenance advice” and transmitted to the communication network. Further, reference to “the receiver” is removed since a receiver is not introduced until later in the claim. Claim 74 has been corrected such that the term “aircraft performance and control parameters” is now --digital performance data—which has a proper antecedent basis. Finally, claim 76 has been

amended to clarify that maintenance advice is transmitted to the communication network, as suggested in the Office Action.

In the Office Action, claims 1-3, 64, 69-74, and 78-79 are rejected as being unpatentable over Smith, et al. (U.S. Patent No. 5,931,877) in view of Kuroda, et al. (U.S. Patent No. 5,381,140).

Per claims 1, 2, and 3, Applicant respectfully submits, as stated in the previous Office Action, that the combined teachings of Smith, et al. and Kuroda, et al. do not disclose all of the limitations of claims 1, 2, and 3. In all previous Office Actions (which were incorporated by reference into the present Office Action) and the present Office Action, the requirement of a "configuration label" continues to be overlooked. Neither Smith, et al. nor Kuroda, et al. disclose the transmission of a configuration label along with aircraft performance and control parameters. Aircraft configuration is used in generating advisories transmitted back to the aircraft (Col. 8, lines 39-40).

In the present Office Action, it is stated that the aircraft id transmitted in Kuroda is sufficient to determine the aircraft configuration. As is well known in the art, even identical models of aircraft are likely configured differently. Navigational equipment, radios, avionics, instrumentation, and the like are available from many different manufacturers with little or no standardization. Further, many aircraft manufacturers customize systems, i.e., hydraulic systems, electrical systems, flight controls, etc., for a particular purchaser. Further field modifications

may take years to be completely implemented across a fleet of aircraft. The present invention circumvents this issue by transmitting the aircraft configuration along with the aircraft ID. The Office Action states that the aircraft configuration is implicit in the aircraft ID. While records are most likely kept which would make this true, none of the cited references discuss how this data could be stored and accessed when needed. If the configuration information is sent by the aircraft, there is no need to locate this information from other sources.

Further, the Office Action states that "one of ordinary skill in the art would have recognized that the maintenance advisory generated in the Smith, et al. system must include the aircraft configuration in conjunction with other transmitted data in order to provide accurate maintenance advisories to a correct aircraft." First, since none of the prior art even discusses aircraft configuration, the Examiner must be relying on common knowledge. This is not a situation where it is appropriate for the Examiner to do so:

It would not be appropriate for the examiner to take official notice of facts without citing a prior art reference where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art. In re Ahlert, 424 F.2d at 1091, 165 USPQ at 420-21. See also In re Grose, 592 F.2d 1161, 1167-68, 201 USPQ 57, 63 (CCPA 1979) ("[W]hen the PTO seeks to rely upon a chemical theory, in establishing a prima facie case of obviousness, it must provide evidentiary support for the existence and meaning of that theory."); In re Eynde, 480 F.2d 1364, 1370, 178 USPQ 470, 474 (CCPA 1973) ("[W]e reject the notion that judicial or administrative notice may be taken of the state of the art. The facts constituting the state of the art are normally subject to the possibility of rational

disagreement among reasonable men and are not amenable to the taking of such notice.").

MPEP § 2144.03 (emphasis in original). The MPEP goes on to set the standard which must be met by the Examiner to provide the reasoning behind the assertion that an element is "common knowledge". Applicant traverses the assertion of common knowledge and maintains that not only would the transmission of aircraft configuration not be common knowledge but that, contrary to the statement in the Office Action, aircraft configuration does not have to be known to practice the Smith, et al. invention. Thus Smith's failure to mention aircraft configuration is not because the need to know "aircraft configuration" is so obvious that it's not worth mentioning but that Smith, et al. do not need aircraft configuration.

This can be illustrated by contrasting the two inventions. Smith, et al. provides a maintenance aid for use on the flight line, not in the air as with the present invention. If an aircraft system fails its built-in-test ("BIT") the system helps the technician fault isolate to the black box which needs replacing. If, for example, an autopilot fails, the Smith, et al. device can simply prompt the technician to open the avionics bay and observe the autopilot and select from a list of possibilities. There is no need to look elsewhere for the information. In contrast, the present invention operates in-flight. The flight crew cannot poke around in avionics bays to find information about the particular autopilot. While Smith, et al. discloses saving a maintenance history of an aircraft (Col. 6, lines 65-67), it does not disclose the need to know, or even any usefulness in knowing, a particular aircraft's configuration at any give point in time. Smith, et al.

is only concerned with maintaining a record of the particular repairs performed.

The Examiner has simply not explained how, based on the disclosure of the cited references one would know to look up aircraft configuration or how to do it. Further, the Examiner has not provided any reasoning on how looking up configuration from some collection of records would be structurally equivalent to having the aircraft transmit its own configuration.

Accordingly, claims 1-3 are in condition for allowance. Reconsideration and allowance of claims 1-3 are respectfully requested.

Per claim 64, in the previous Office Action it was asserted that the data recorder of claim 64 with taught in Col. 4, lines 37-40 of the Smith, et al. reference. Smith, et al. actually discloses retrieving data from a removable cartridge or module, off-line during the pilot debrief. This is inconsistent with claim 64 which requires the transmission of the performance and control data while in-flight. There is no disclosure in Kuroda, et al. for transmitting any information beyond navigational information. In fact, Kuroda, et al. is only concerned with the monitoring of aircraft position as a substitute for air traffic control radar. One reading Kuroda, et al. would certainly not be motivated to send information which would be worthless to determining a position. This Office Action incorporates the previous rejection without addressing how one makes the step from reviewing flight data on the ground to transmitting the flight data to the ground to get the earliest possible warning of a failure or failing device. Kuroda, et al. simply does not fill the gap.

Finally, the previous Office Action cites Col. 10, lines 52-54 (claim 6 of Smith, et al.) as teaching analysis at the central data warehouse and generating a maintenance advisory in real time. While claim 6 is clearly drawn to the “guided probe” disclosure of Col. 6, lines 2-5, neither claim 6 nor its support in the specification indicate that the guided probe test is conducted in real time and certainly not while in flight. In fact this requires a trained technician to operate the probe under the guidance of the system. This is inconsistent with the present invention wherein a flight crew is provided in-flight maintenance information. Again, Smith, et al. is inconsistent with in-flight advisories and Kuroda, et al. does not fill the gap.

Accordingly, Applicant respectfully submits that claim 64 is now in condition for allowance. Claims 66-68 and 70-74 depend from claim 64 and, at least for the reasons stated with regard to claim 64, are likewise in condition for allowance. Reexamination and allowance of claims 64 and 66-74 are respectfully requested.

In the Office Action, claim 75 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Smith, et al. and Kuroda, et al. in further view of Monroe (U.S. Patent No. 5,798,458). It should be noted that claim 75 has been amended to require in flight communication of performance data. This requirement is inconsistent with Smith, et al., which provides maintenance information after a failure has been detected by a built-in-test, which is consistent with operation on the ground, rather than in flight. Smith, et al. describes the satellite communication as utilizing “low-cost commercial **ground** stations incorporating Very Small

Aperture Terminals (VSAT) with 1 to 2 meter antennas” (emphasis added) (col. 4, lines 59-64). Further, Smith suggests that high speed land lines could also be used exclusively, or in combination with, the satellite (Col. 5, lines 39-43). Smith, et al. clearly describes a system intended for use while the aircraft is in maintenance, on the ground¹ and makes no disclosure of data collection while the aircraft is operational, as required by claim 75. Smith, et al. is teaches away from the collection of data while an aircraft is airborne and both Kuroda, et al. and Monroe do not fill the gaps.

Applicant respectfully submits that claim 75 is in condition for allowance. Claims 76-77 depend from claim 75 and, at least for the reasons stated with regard to claim 75, are likewise in condition for allowance. Reexamination and allowance of claims 75-77 are respectfully requested.

As per claims 78 and 79, the same reasoning applies as with regard to claim 64. Namely that Smith, et al is inconsistent with in-flight operation and that even if Smith, et al. could somehow be converted to in-flight operation that Kuroda, et al. simply does not fill the gaps between Smith, et al. and the present invention.

Accordingly, Applicant submits that claims 78 and 79 are now in condition for allowance. Reexamination and allowance of claims 78 and 79 are respectfully requested.

¹ A previously mentioned factor of Smith, et al. which indicates ground based operation is off-line retrieval of

In the Office Action, claims 92, 93, and 95 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuroda, et al. in view of Monroe (incorporating the analysis of a previous Office Action by reference as per claim 36). As per claim 92, it is asserted that Kuroda, et al. discloses the transmission and reception of aircraft performance and control parameters and the storage thereof. Further, “that it would have been readily apparent for one skilled in the art that in the event of a crash, the data stored in the storage device in Kuroda et al would have become a ‘crash data recorded’ as claimed.” Applicant respectfully submits that: 1) the storage disclosed in Kuroda, et al. is only used to calculate a predicted or theoretical track and there is no disclosure of long term storage; and 2) to extrapolate archival of data as in a crash data recorded requires impermissible hindsight.

In Kuroda, et al. the storage shown in FIG. 3, the monitor file (a/k/a “track file”) provides storage for data necessary to predict a theoretical path of the aircraft, not long term storage of performance and control parameters as asserted in the Office Action. The theoretical path is simply used to qualify incoming data at the ground station (*see*, for example, Col. 3, lines 11-18, Col. 4, lines 30-40). There simply is no disclosure of archival of performance and control data as would be necessary for a crash data recorder, or for that matter, Kuroda, et al. does not disclose the storage of any data for any purpose, except that used to predict a track and certainly, under the disclosure of Kuroda, et al., there is no need to store any of that data after the aircraft

completes its course. Again, despite the lack of disclosure of archival, the Examiner seems to be asserting that it would be common knowledge to simply not erase the data (despite the fact that the track file would eventually become astronomical in size) so that we would still have the data in the event there was a crash, despite the fact that such reasoning appears nowhere in any of the cited references.

A critical step in analyzing the patentability of claims pursuant to section 103(a) is casting the mind back to the time of invention to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one "to fall victim to the insidious effect of hindsight syndrome wherein that which only the invention taught is used against its teacher."²

Since Kuroda, et al. does not teach archival or use of the incoming data for any purpose other than tracking, the Office Action clearly relies on the present invention itself to supply the missing pieces. Only the present invention teaches the archival of aircraft performance and control information to remotely provide the functions of a crash data recorder. If the Examiner wishes to maintain that the missing steps are somehow "common knowledge" he must meet the standards set forth in the MPEP § 2144.03, which he has not.

Applicant respectfully submits that claim 92 is now in condition for allowance. Claims 93 and 95 depend from claim 92 and, at least for the reasons stated with regard to claim 92, are

² *In re Kotzab*, 208 F.3d 1352, 54 USPQ2d 1308 (Fed. Cir. 2000)(quoting *W. L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 313 (Fed. Cir. 1983))(citations omitted).

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likewise in condition for allowance. Reexamination and allowance of claims 92-93 and 95 are respectfully requested.

No additional fee is believed to be due. However, if any fee is made payable by the filing of this paper, please consider this our authorization to charge the Deposit Account of the undersigned, No. 06-0540.

Respectfully submitted,

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